

IN THE SPECIFICATION

Please amend the specification as follows (a "marked up" version of the amendment is attached hereto as Exhibit 4 pursuant to Rule 1.121(b)):

On page 1, replace paragraphs [0023] - [0025] with the following paragraphs:

[0023] Figure 6 shows a 10% polyacrylamide gel with two fractions of *E. coli* expressed  $\beta,\beta$ -carotene 15,15'-monooxygenase after affinity tag purification. Lanes 1 and 2 show two fractions eluted from a  $\text{Co}^{2+}$ -chelate column showing the main band at 60 kD. Lane 3 is a low range molecular weight marker (Bio Rad).

[0024] Figure 7 shows an HPLC analysis of an activity test of  $\beta,\beta$ -carotene 15,15'-monooxygenase which was cloned and expressed in *E. coli*. The HPLC profile is of the reaction mixture at the end of an activity assay for the  $\beta,\beta$ -carotene 15,15'-monooxygenase following the procedure in Example 1. The first peak in the chromatogram represents the internal standard, while the second peak corresponds to retinal as the only product formed during the central cleavage with  $\beta$ -carotene as substrate.

[0025] Figure 8 is a chromatogram demonstrating that the peak from Fig. 7 representing the only product of the enzymatic cleaving is retinal. A sample which was positive in the activity assay (green (upper) chromatogram) was spiked with retinal and